

ABSTRACT

A method of forming an isolation structure comprising forming n-type areas and/or p-type areas implanted respectively therein on a first surface of the substrate. A
a pad oxide film is grown on ^{the} substrate first surface covering the p-wells and/or n-wells.
5 A diffusion barrier(s) is deposited on the substrate first surface and a substrate second surface to form an encapsulated structure. The encapsulated structure is annealed to activate the n-type and/or p-type areas. A mask material is applied over the diffusion barrier on the substrate first surface to define active device areas and a dry etch process is used to etch away the unmasked portions of the diffusion barrier. The mask material
10 is stripped and a field oxide is grown on the substrate first surface. A portion of the field oxide and all of the diffusion barrier is removed, resulting in active areas surrounded by a field isolation structure.

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